

**CLAIMS:**

**1.**

1       A fuel tank assembly for a fuel injected combustion engine comprising:  
2            a fuel tank having an internal surface, an external surface, a bottom wall  
3        defined between the internal and external surfaces, a fuel chamber defined by the  
4        internal surface, and a bottom access hole extending through the bottom wall to  
5        communicate with the fuel chamber; and  
6            a fuel pump subassembly substantially inserted into the fuel chamber through  
7        the bottom access hole, the fuel pump subassembly having a bottom flange engaged  
8        sealably to the bottom wall and covering the access hole, the fuel pump subassembly  
9        having a fuel pump carried by the bottom flange and disposed in the fuel chamber.

**2.**

1       The fuel tank assembly set forth in claim 1 comprising:  
2            a fuel pressure regulator projecting upward from the flange and into the fuel  
3        chamber for receiving fuel from the fuel pump; and  
4            a fuel outlet nozzle extending downward through the flange for flowing fuel  
5        from the pressure regulator and out of the fuel chamber.

**3.**

1       The fuel tank assembly set forth in claim 2 comprising a fuel filter projecting  
2       upward from the flange into the fuel chamber, and wherein the fuel filter filters fuel  
3       flowing from the fuel pump to the fuel regulator.

4.

1        The fuel tank assembly set forth in claim 3 comprising a fuel level sensor of  
2        the fuel pump subassembly engaged to the bottom flange.

5.

1        The fuel tank assembly set forth in claim 4 comprising an electric connector  
2        formed unitarily to the bottom flange and extending through the flange.

6.

1        The fuel tank assembly set forth in claim 1 comprising an elongated fuel pump  
2        bracket projecting longitudinally from the bottom flange and engaged to the fuel  
3        pump.

7.

1        The fuel tank assembly set forth in claim 6 comprising:  
2        a first forward foot of the bracket; and  
3        a first vibration dampening member engaged directly between the bottom  
4        flange and the first foot of the bracket for isolating the bottom flange from the bracket  
5        and the fuel pump.

8.

1        The fuel tank assembly set forth in claim 7 comprising:  
2        an elongated bridging portion of the bracket projecting from the first foot and  
3        away from the flange; and  
4        wherein the fuel pump is engaged to the bridging portion.

9.

1        The fuel tank assembly set forth in claim 8 comprising:  
2            a rearward foot of the bracket biased against the internal surface of the fuel  
3        tank; and  
4            wherein the bridging portion is flexible and extends resiliently between the  
5        first forward foot and the rearward foot.

10.

1        The fuel tank assembly set forth in claim 9 comprising:  
2            a vibration dampening pad engaged to the rearward foot; and  
3            wherein the dampening pad is compressed resiliently between the rearward  
4        foot and the internal surface by the bridging portion.

11.

1        The fuel tank assembly set forth in claim 10 wherein the dampening pad  
2        engages the internal surface at the bottom wall of the fuel tank.

12.

1        The fuel tank assembly set forth in claim 7 comprising:  
2            a second forward foot of the bracket; and  
3            a second vibration dampening member engaged directly between the bottom  
4        flange and the first foot of the bracket for isolating the bottom flange from the bracket  
5        and the fuel pump.

13.

1        The fuel tank assembly set forth in claim 11 comprising:  
2            a second forward foot of the bracket; and  
3            a second vibration dampening member engaged directly between the bottom  
4        flange and the first foot of the bracket for isolating the bottom flange from the bracket  
5        and the fuel pump.

14.

1        The fuel tank assembly set forth in claim 7 wherein the vibration dampening  
2        member is a fuel resistant rubber grommet.

15.

1        The fuel tank assembly set forth in claim 14 comprising:  
2            a stanchion projecting upward from the bottom flange, the stanchion having a  
3        threaded blind bore;  
4            the first foot of the bracket having an inner circumferential edge defining a  
5        hole;  
6            the grommet having a circumferential groove open radially outward;  
7            wherein the grommet extends through the hole and the circumferential edge  
8        seats in the circumferential groove;  
9            a male fastener threaded into the blind bore and extending upward  
10      concentrically through the grommet to secure the leg of the bracket to the flange; and  
11      wherein the first foot does not directly engage the flange.

**16.**

1        The fuel tank assembly set forth in claim 1 wherein the fuel tank is motorcycle  
2        fuel tank having a forward global portion, having a top mounted fuel filler cap and a  
3        rearward converging portion wherein the fuel pump is disposed.

**17.**

1        The fuel tank assembly set forth in claim 16 comprising a bag-type inlet fuel  
2        filter being in contact with the internal surface of the fuel tank at the bottom wall and  
3        a side wall of the fuel tank.

**18.**

1        The fuel tank assembly set forth in claim 11 wherein the bridging portion is an  
2        arcuate ban having a concave bottom side facing downward and an opposite top side  
3        engaged to the fuel pump.

**19.**

1        The fuel tank assembly set forth in claim 11 wherein a sub-bracket is engaged  
2        to the bridging portion for supporting a fuel level sensor of the fuel pump  
3        subassembly.

**20.**

1        The fuel tank assembly set forth in claim 18 comprising:  
2        a strap wrapped about the fuel pump and the ban of the bracket;  
3        a first finger projecting forward from the ban, the first finger having an  
4        upward bent distal end for engaging a forward end of the fuel pump; and

5           a second finger projecting rearward from the ban, the second finger having an  
6   upward bent distal end for engaging a rearward end of the fuel pump.

21.

1           A method of manufacturing a fuel tank assembly for a fuel injected  
2   combustion engine, the method comprising the steps of:  
3           assembling a fuel pump subassembly having a bottom flange, a bracket  
4   engaged upward from the bottom flange, and a fuel pump engaged to the bracket;  
5           inserting the fuel pump subassembly upward through a bottom access hole of a  
6   fuel tank;  
7           contacting a rearward foot of the bracket against an internal surface of the fuel  
8   tank;  
9           flexing the bracket;  
10          covering the access hole of the fuel tank with the bottom flange; and  
11          sealing the flange to an external surface of the fuel tank while the bracket  
12   remains flexed.

22.

1           The method of manufacturing set forth in claim 21 comprising the further step  
2   of rotating the fuel pump subassembly in an imaginary generally vertical plane,  
3   simultaneous to the step of inserting the fuel pump subassembly, so that the rearward  
4   foot contacts the internal surface at a bottom wall of the fuel tank.